REMARKS

Reconsideration of this application is respectfully requested in view of the foregoing amendment and the following remarks.

By the foregoing amendment, claims 1 and 8 have been amended, claims 2, 18 and 19 have been canceled without prejudice or disclaimer for filing in a continuation application, and new claim 20 has been added. Claims 3-7 and 9-17 have been withdrawn from consideration. Thus, claims 1, 8 and 20 are currently pending in the application and subject to examination.

Informal Matters

In the Office Action mailed January 18, 2007, claim 1 was objected to for informalities. Claim 1 has been amended responsive to the objection. If any additional amendment is necessary to overcome the objection, the Examiner is requested to contact the Applicant's undersigned representative.

In the outstanding Office Action, claims 1, 2 and 8 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,626,728 to Ramakrishnan et, al. (hereinafter, "Ramakrishnan"), or, alternatively, under 35 U.S.C. § 103(a) as being unpatentable over Ramakrishnan in view of U.S. Patent No. 4,775,814 to Yuhara et, al. (hereinafter, "Yuhara"). Claims 18 and 19 were rejected under 35 U.S.C. 35 U.S.C. § 103(a) as being unpatentable over Ramakrishnan in view of Yuhara and further in view of U.S. Patent No. 4,775,814 to Russell et, al. (hereinafter, "Russell"). It is noted that claims 2, 18 and 19 have been canceled, and claims 1 and 8 have been amended. To the extent that the rejections remain applicable to the claims currently pending, the Applicant hereby traverses the rejections, as follows.

In the Applicant's invention as recited in independent claim 1, as amended, a method of manufacturing a surface acoustic wave includes the steps of activating at least one of the joining surfaces of the piezoelectric substrate and the supporting substrate; and joining the piezoelectric substrate and the supporting substrate in such a manner that the activated joining surfaces face each other. The activating step as recited in claim 1, as amended, includes the step of carrying out an activation process using ion beams, neutralized high-energy atom beams, or plasma of inert gas or oxygen on at least one of the joining surfaces of the piezoelectric substrate and the supporting substrate. The joining step as recited in claim 1, as amended, includes the step of directly joining the piezoelectric substrate and the supporting substrate at room temperature. Furthermore, as recited in claim 1, as amended; the piezoelectric substrate is a lithium tantalate or lithium niobate piezoelectric single-crystal substrate that is a rotated Y-cut plate having a surface acoustic wave propagation direction X; and the supporting substrate is a single-crystal substrate containing sapphire as a main component or a ceramic substrate containing aluminum oxide aluminum nitride or silicon nitride as a main component.

The Applicant respectfully submits none of the applied art of record discloses or suggests at least the combination of features set forth above, as recited in independent claim 1, as amended.

For example, Ramakrishnan does not teach an activation process as recited in amended independent claim 1. As disclosed at column 3, lines 23-51, Ramakrishnan teaches sputtering and annealing. More specifically, Ramakrishnan teaches sputter deposition in which a thin film 16 is deposited onto a surface 14. As disclosed at

column 3, lines 58-63, Ramakrishnan teaches lead zirconium is sputtered onto the film 16 that has been annealed to form a thin film 18. Ramakrishnan does not disclose or suggest activating at least one of the joining surfaces of the piezoelectric substrate and the supporting substrate using ion beams, neutralized high-energy atom beams, or plasma of inert gas or oxygen, as recited in amended claim 1.

It is to be noted that the deposition of a film on the substrate by sputtering is quite different from direct joining of two substrates. Ramakrishnan teaches that the film 16 is interposed between the piezoelectric layer 18 and the substrate 12. Ramakrishnan does not disclose or suggest the step of directly joining the piezoelectric substrate and the supporting substrate at room temperature, as recited in claim 1, as amended.

Moreover, Ramakrishnan fails to teach or suggest that the substrate 12 is a single-crystal substrate containing sapphire as a main component, or a ceramic substrate containing aluminum oxide, aluminum niobate, or silicon nitride as a main component.

Yuhara and Russell are not cited for, nor do Yuhara and Russell correct the deficiencies of Ramakrishnan noted above.

To qualify as prior art under 35 U.S.C. §102, a single reference must teach, i.e., identically describe, each feature of a rejected claim. Moreover, to establish *prima facie* obviousness of a rejected claim, the applied art of record must teach or suggest each feature of a rejected claim. *See M.P.E.P. §2143.03 and In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998).* As explained above, none of the applied art of record, either alone or in combination, teaches or suggests each and every feature recited in independent claim 1. Thus, Applicant respectfully submits that

independent claim 1 is neither anticipated nor rendered obvious by Ramakrishnan, taken alone, or in any combination with Yuhara and/or Russell. Accordingly, the Applicant respectfully submits that independent claim 1 is patentably distinct over Ramakrishnan, Yuhara and Russell, and in condition for allowance.

Claim 8 depends from allowable claim 1. As such, claim 8 is allowable for at least the reasons set forth above with respect to claim 1.

New Claim 20

Similarly to as described above with respect to claim 1, the Applicant submits that claim 20 is allowable at least because none of the applied art of record, nor any combination thereof, discloses or suggests at least the features of a method of manufacturing a surface acoustic wave device that has a surface acoustic wave filter including comb-shaped electrodes, electrode pads, and wiring patterns formed on a joined substrate produced by joining a piezoelectric substrate and a supporting substrate to each other, the method comprising the steps of: activating at least one of the joining surfaces of the piezoelectric substrate and the supporting substrate; and joining the piezoelectric substrate and the supporting substrate in such a manner that the activated joining surfaces face each other, wherein: the joining step includes the step of directly joining the piezoelectric substrate and the supporting substrate at room temperature; the piezoelectric substrate is a lithium tantalate or lithium niobate piezoelectric single-crystal substrate that is a rotated Y-cut plate having a surface acoustic wave propagation direction X; and the supporting substrate is a single-crystal substrate containing sapphire as a main component, as recited in new claim 20.

Conclusion

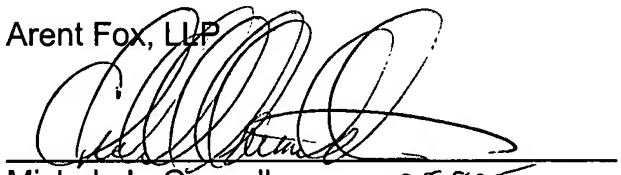
For all of the above reasons, it is respectfully submitted that claims 1, 8 and 20 are in condition for allowance and a Notice of Allowability is earnestly solicited.

Should the Examiner determine that any further action is necessary to place this application into better form, the Examiner is invited to contact the undersigned representative at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants hereby petition for an appropriate extension of time. The Commissioner is hereby authorized to charge any fee deficiency or credit any overpayment associated with this communication to Deposit Account No. 01-2300 referencing client matter number **025720-00025**.

Respectfully submitted,

Arent Fox, LLP



Michele L. Connell 25,895
Registration No. 52,763

Customer No. 004372
1050 Connecticut Ave., N.W.
Suite 400
Washington, D.C. 20036-5339
Telephone No. (202) 857-6104
Facsimile No. (202) 857-6395

MLC:

Enclosures: